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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,084	02/11/2004	Chien-Hua Chen	084061-0551	2353

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

DANG, TRUNG Q

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

✓ # 42

Office Action Summary	Application No.	Applicant(s)	
	10/776,084	CHEN ET AL.	
	Examiner	Art Unit	
	Trung Dang	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 29-39 and 41-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 and 40 is/are rejected.
- 7) ☒ Claim(s) 25-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/11/04; 7/08/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of claims 1-28 and 40 in the reply filed on 7/27/05 is acknowledged.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-9, 11-15, 18, 20, 22-24 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Aligner et al. (US 2002/1070175 cited by applicants).

With reference to Figs. 10A-10B, the reference teaches the claimed invention in that it discloses a method for packaging and singulating a micro device wafer having a plurality of micro devices, the method comprising:

providing a multi-lid substrate 2 with a trench pattern 5 on a first side of the multi-lid substrate, the trench pattern having intersection portions and non-intersection portions (see the trench 5 in Fig. 10B);

coupling the multi-lid substrate to the micro device wafer such that the intersection portions of the trench pattern extend adjacent to at least two micro devices; and

removing portions of the multi-lid substrate between a second side of the multi-lid substrate and the trench pattern while the multi-lid substrate is

coupled to the micro device wafer (see sawing lines 7 in Fig. 10A or sawing lines 19 in Fig. 10B).

For claims 2 and 40, Fig. 10B shows a single non-intersection portion (portion containing contacts 9) extends between consecutive micro devices 11.

For claims 3-6, see Fig. 10A for the positions of contact points 9 and opening 5.

For claim 7, the portion of the singulating line 20 corresponds to the claimed "passageway portion" where the micro device wafer 1 is divided up into individual chip 11 (para. [0058]).

For claims 8, 20 and 23, see para. [0024] for the materials of the multi-lid substrate 2.

For claims 14-15, paragraph [0023] discloses that the multi-lid substrate 2 is bonded to the micro device wafer 1 by adhesive bonding and/or soldering, hence the adhesive material and/or soldering material present at interface 3 (Fig. 10A) reads on the claimed "a seal". Furthermore, the adhesive material and/or soldering material at the leg portions of the multi-lid substrate 2 constitute a bonding ring as claimed in claim 15.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10, 16, 17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aligner et al. as above.

Aligner teaches a method as described above, which includes the application of the adhesive bonding and/or soldering materials for bonding the multi-lid substrate 2 and the micro device substrate 1 as noted above. The subject matter of claims 16-17 would have been obvious to one of ordinary skill in the art in that the adhesive bonding and/or soldering materials can be applied either on the surface of the multi-lid substrate 2 or on the surface of the micro device substrate 1 so as to effectuate the bonding.

For claim 21, although Aligner is silent about the dimensions of the trench pattern 5, the determination of such dimensions for the trench pattern 5 as claimed would have been obvious to one skilled in the art because it is well settled that, absent a showing of criticality or unexpected result by applicant, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d (Fed.cir), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Furthermore, the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where

patentability is said to be based upon particular chosen dimensions or upon another variable recited in the claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d, 1575, 1578, 16 USPQ2d, 1936 (Fed. Cir. 1990).

For claim 10, the Examiner takes official notice that etching of a silicon or glass substrate to form a trench pattern by photolithography, sand drilling, laser cutting, water jet, molding and material deposition as claimed is known in the art, and the application of a known technique to make the same would have been within the level of an artisan.

For claim 19, the Examiner takes official notice that the use of a microstructure for an electro-optical device such as a liquid crystal display device is known.

Allowable Subject Matter

5. Claims 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 25-28 are indicated allowable over prior art of record because the prior


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art does not teach or suggest the claimed feature regarding the formation of a protective material between a floor of the trench pattern and an opposite portion of the micro device wafer.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trung Dang whose telephone number is 571-272-1857. The examiner can normally be reached on Mon-Friday 9:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Trung Dang
Primary Examiner
Art Unit 2823

10/17/05